



Faculty of Economics and Business

**ASSESSING THE FACTORS AFFECTING MONEY
DEMAND IN RUSSIA**

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Statement of Originality

The work described in this Final Year Project, entitled
“Assessing the Factors Affecting Money Demand in Russia”
is to the best of the author’s knowledge that of the author except
where due reference is made.

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ABSTRACT

ASSESSING THE FACTORS AFFECTING MONEY DEMAND IN RUSSIA

By

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This study investigates whether any relationship exists among real income, advertising expenditure, exchange rate and M2 monetary aggregate in Russia from 2002Q1 to 2012Q2 using quarterly data. The Unit Root test, Johansen-Juselius Cointegration test, VAR Granger Causality are used in this study to examine the whether cointegration and/or causality relationship exists among the variables. Indeed, the finding that all the estimated variables are I(1) and cointegration and causality relationship do not exist among the variables of real income, exchange rate and M2 monetary aggregate. However, the results show that bidirectional relationship exists between advertising expenditure and real ruble balances in granger causality in the short run. This study provides sufficient evidence that the advertising expenditure is an important factor of money demand.

Keywords: Real Income, Advertising Expenditure, Exchange Rate, M2 monetary aggregate and Bidirectional Relationship

ABSTRAK

MENILAI FAKTOR-FAKTOR YANG MEMPENGARUHI PERMINTAAN WANG DI RUSSIA

Oleh

Tan Jin Yen

Kajian ini mengkaji sama ada terdapat hubungan wujud antara pendapatan benar, perbelanjaan pengiklanan, kadar pertukaran wang, dan M2 agregat kewangan di Russia bermula dari tahun 2002 suku pertama hingga 2012 suku keempat. Dalam kajian ini, ujian kepegunan, ujian kopengamiran, dan ujian penyebab Granger telah digunakan untuk menguji sama ada terdapat hubungan wujud antara pembolehubah. Sesungguhnya, hasil kajian menunjukkan semua pembolehubah adalah bersepadu perintah pertama and kopengamiran and penyebab Granger tidak wujud antara pendapatan benar, kadar pertukaran wang, dan M2 agregat kewangan. Walau bagaimanapun, keputusan menunjukkan bahawa hubungan dwiarah wujud antara perbelanjaan pengiklanan dan M2 agregat kewangan di penyebab Granger dalam jangka pendek. Kajian ini menyediakan bukti yang mencukupi bahawa perbelanjaan pengiklanan adalah faktor yang penting dalam fungsi permintaan wang.

Kata Kunci: Pendapatan Benar, Perbelanjaan Pengiklanan, Kadar Pertukaran Wang,
M2 Agregat Kewangan dan Hubungan Dwiarah

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CHAPTER ONE

INTRODUCTION

1.0 Introduction

Over last few decades, there are numerous crises caused a severe impact on the global economy which include Russian Federation. The most significant crisis is the collapse of Soviet Union in 1991 (The Cold War Museum, 2015). This collapse of Soviet Union leads to the formation of fifteen newly independent countries. Russia Federation was established under Boris Yeltsin in 1991. Since 1991, Russia has gone through several structural reforms and development activities. However, Russia faced severe inflation and instability of exchange rate. This is because majority of former Soviet Union residents prefer to buy imported goods rather than domestic produced. The outflow of capital and inflow of goods imposed a large effect on Russia's economy. A more tighten monetary and fiscal policies were introduced in 1995 to control the ruble depreciation and hyperinflation problem (Oomes & Ohnsorge, 2005). If money demand increase steadily without increase in money supply, this will cause recession and deflation. In contrast, inflation problem will be occurred if money supply exceeds the quantity of money demanded. Hence, it is crucial for Central Bank to determine the quantity of money demanded in an economy before inject more money into the market (Hiew, Puah & Habibullah, 2013). The term 'Money Demand' can be best defined as the total amount of money balances that people willing to hold in the form of cash rather than investing in bonds or stocks with interest earnings (Boundless, 2014). Basically, the demand for money was affected by three basic motives for holding money which is transactions,

precaution, and speculation (CliffsNotes, 2014). In addition, holding money provides liquidity but cause the loss of interest advantage by holding other asset (Boundless, 2014). This price of money or forgone interest is the opportunity cost of holding money in the form of cash. A stable and well-proposed money demand function will formulate a better monetary policy. Gurley and Shaw (1967) indicate that monetary policy plays a vital role in stabilizing financial market and facilitating savings into real capital. However, there are few economists argued that monetary policy will be less relevant to developing economies as these countries lack of well-organized financial and capital markets. Therefore, this paper is focus on money demand rather than demand for other assets.

A stable money demand allows for better predictions of the effect of monetary policy on interest rates, output, and inflation, and therefore reduces the possibility of an inflation bias (Cziráky and Gillman, 2006). However, interest rate is inappropriate in determining quantity of money demanded for developing countries as these countries lack of well-designed financial market. In addition, interest rate is not a suitable indicator for money demand in Russia as Russia's interbank markets has low liquidity of assets compared to other countries (Korhonen and Mehrotra, 2010). Goldman Sachs group believed that Brazil and Russia will become world dominant suppliers of raw materials whereas China and India will become the dominant world supplier of manufactured goods and services.

There are few theories explaining about money demand in an economy. Firstly, the Cambridge economists concerned on money demand by stated that it is a public demand for money holdings and there is a direct relationship between real income and real money demand. Secondly, the Keynesian theory addressed on

money demand based on three motives that people hold money rather than save it into bank. Moreover, this theory also mentioned that interest rate plays an important role in determining for demand of real money balances. The post-Keynesian theory emphasized on precautionary money demand under concept of uncertainty whereas transaction costs under concept of certainty. Besides that, consumer demand theory focused on utility maximization framework that affects money demand. Lastly, portfolio approach using portfolio optimization framework to explain money demand.

In term of methodology, this study will employed unit root tests consist of Philips and Perron (PP) and Kwiatkowski-Phillips-Schmidt-Shin (KPSS) to analyze the stationarity of the times series data. The finding of the unit root tests will show whether the times series data are stationary or random-walk. After that, Johansen Cointegration test will be used for investigate the relationship between the explanatory variables and money demand in the long run. Lastly, the VAR Granger Causality test and Granger causality test will be conducted to examine the relationship between the explanatory variables and money demand in the short term.

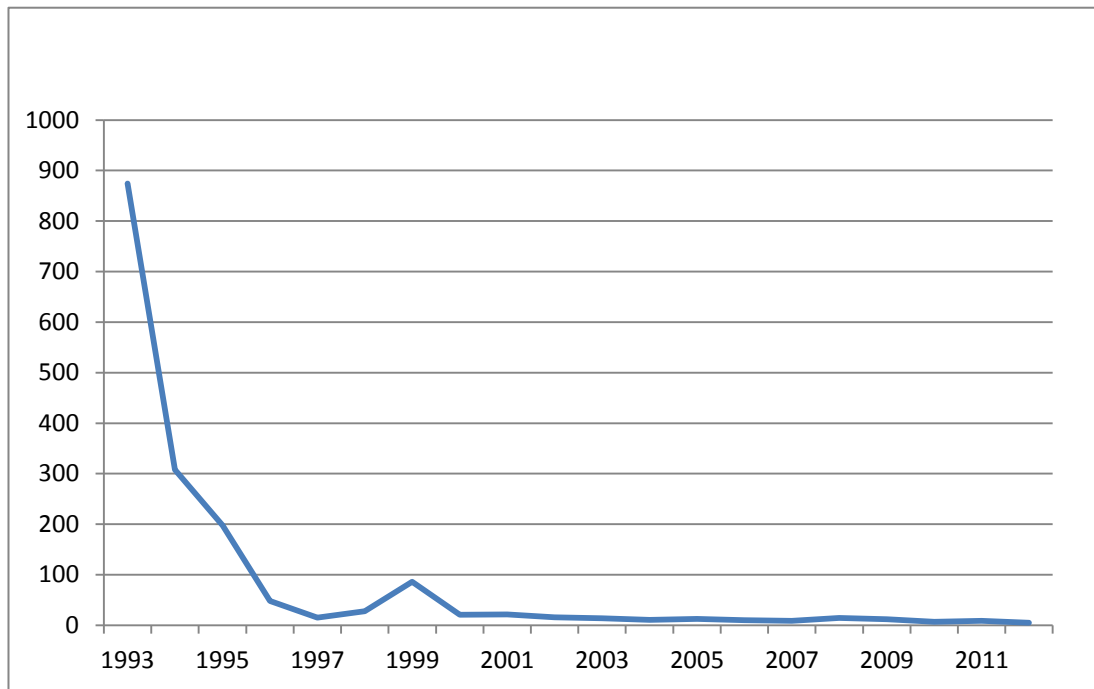
1.1 Background

There are six stages to describe the history of Russia, that are, ancient Russia, the Mongols and emergence of Moscow, the Romanovs, the path to revolution, the Soviet Union Era, and post-communism. Soviet Union Era was important as it imposed great impacts on what the Russia today is. During this era, economy is centrally planned and controlled by Communist Party. Majority of the Soviet economy structure was formed under the leader Joseph Stalin. However, the collapse of Soviet Union in 1991 leads to the formation of Russian Federation. The newly

established Russian Federation was under Boris Yeltsin where the government strived to transform the central-planned economy towards market-based economy. This is done by introduced 'Shock Therapy' which include increasing liberalized of the economy and privatization to boost up economy growth. However, two crises happened in Russia in 1992 and 1998. The transforming process into market based economy in the early 1992 has leads to the widespread of problems such as unemployment and inflation. These problems became worst when financial crisis happened in 1998 (Hoeppler, 2011). The economic reform activity executed after the collapse of Soviet Union has caused steady increase in poverty and inequality.

According to International Energy Agency (2014), Russia economy largely depends on energy sector. Currently, Russia is the world's largest resources of oil and gas reserve and significant reserve of modest coal. EIA (2013) shows that oil and gas revenues contribute for over 50 percent of Russia's budget and this implied that oil and gas sector plays a very important role in Russia's economy growth.

Figure 1.1: Russia's Inflation Rate from 1993 to 2011

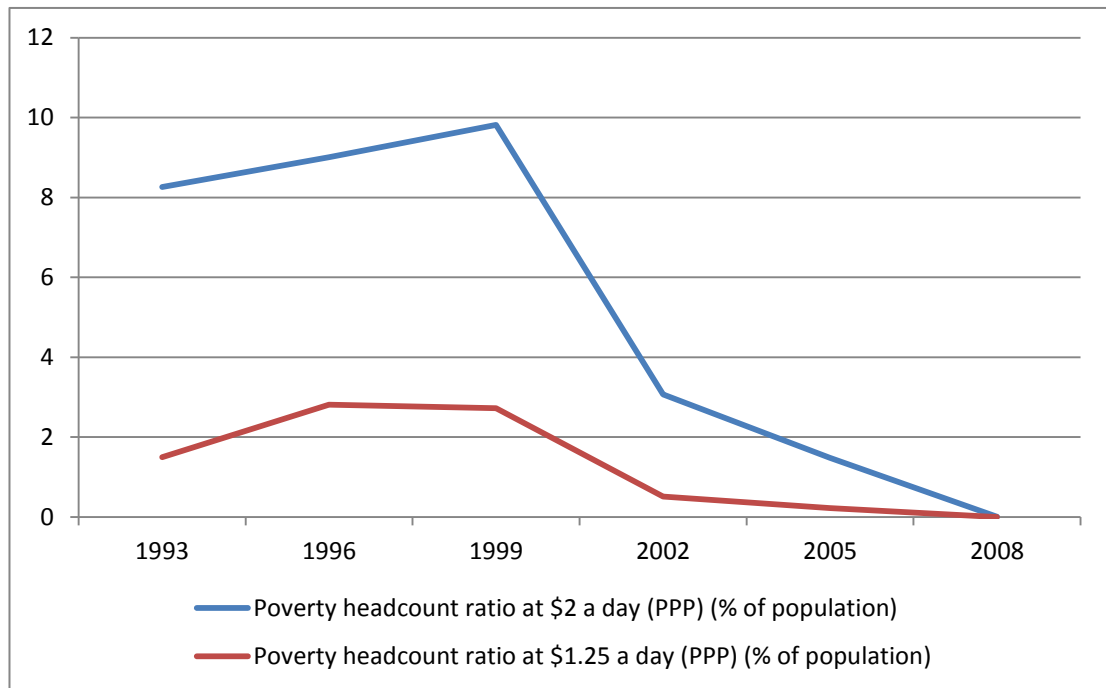


Source: World Bank, (2015)

The graph above indicates the inflation rate in Russia from 1993 until 2011. In the beginning of 1992, the Central Bank of Russia injected a large amount of money into market at an average increment rate of 30% compared to previous quarter in the same year. In the beginning of 1993, the money supply in Russia has increased eighteen times. Besides that, large portion of foreign currency deposit also contributed to the sharp increase in money supply. This large quantity of money supply and instability of monetary policy lead to the high inflation rate in Russia. However, there is a drastic dropped in the inflation rate from 1993 to 1997. This is because increased capital investment, successful of government policies and desirable global economic cycle (Bank of Russia, 1997). The global financial crisis in 1998 and the withdrawal of price control have caused a sharp increase of inflation rate in 1999 compared to the previous periods (Hoeppler, 2011). The following

years show a stable inflation rate due to the more stringent monetary policy being executed.

Figure 1.2: Russia's Poverty Headcount Ratio from 1993 to 2008

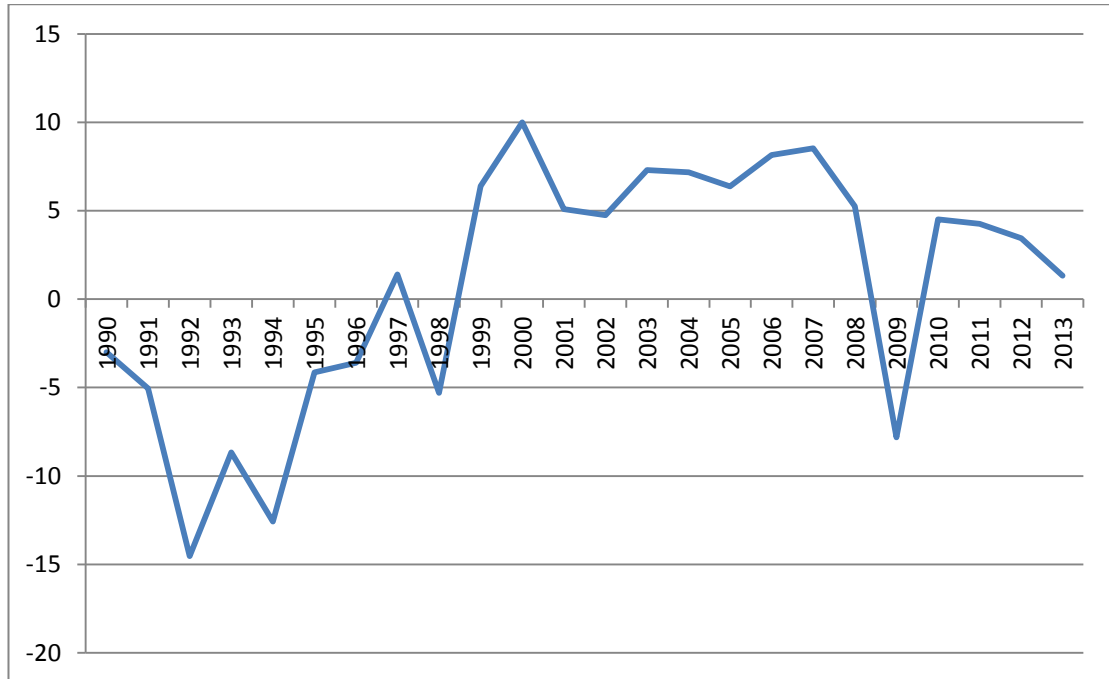


Source: World Bank, (2015)

The graph above shows the poverty headcount ratio of the population in Russia. In 1993, there are 12million of the population live below \$2 a day and approximately 2million of the population live under extreme poverty or \$1.25 a day. The rate increased steadily from 1993 until the late of 1999. The reasons are declined national income after the collapse of Soviet Union and widen inequality in term of controlled income and prices (Klugman & Braithwaite, 1998). In contrast, the poverty rate in Russia has decreased since 2000. Vladimir Vladimirovich Putin becomes the President of Russia after Boris Yeltsin unexpectedly resigned. The new government has initiated economic reforms by reduce government spending and increase tax revenue (Sputnik International, 2008). The gradual attainment of financial stability can be measures through the doubled of real incomes and poverty

rate reduced to half (Sputnik International, 2008). Besides that, Russia categorized as mostly-unfree economic freedom with a score of 52.1 and ranked 143th in the world (The Heritage Foundation, 2015).

Figure 1.3: Russia's Gross Domestic Product from 1990 to 2012



Source: World Bank, (2015)

The graph above indicates the gross domestic product (GDP) in Russia from 1990 until 2012. During 1990 until 1999, GDP in Russia faced negative growth or declined by US\$ 374.5 billion (Kushnir, 2014). However, there is great improvement in GDP since Vladimir Vladimirovich Putin become the new president of Russia in 1999. The government has executed a brilliant policy to manage oil export revenues and encourage industrial production (Sputnik International, 2008). The eight years of first presidency of Putin has improved the GDP significantly which grew for 70 percent before a sharp decline in 2008 due to financial crisis (Sputnik International, 2008). In 2008, Russia's economy was the world's ninth-biggest with a GDP of US\$1.7 trillion and the ranking dropped to tenth-largest economy in the world in

2014 although the GDP amount has increased to US\$1.9 trillion (Cable News Network, 2015).

1.2 Problem Statement

Boris Yeltsin became the President of Russia Federation after the collapse of Soviet Union in 1991. Although the government strived to transform the centrally-planned economy towards market-based economy, but excessive supply of money and removal of price control has caused high inflation problem in Russia. The low income earnings of Russians were unable to afford for their daily expenses. According to RT (2012), there are 650,000 Russians worked in public sector and received a minimum wage. In addition, the minimum wage rate in Russia is much lesser compared to other countries. After the formation of Russian Federation, another macroeconomic variable of exchange rate showed an unstable trend. This is partly due to weak financial system in Russia. The Russia currency ruble can be exchanged for United States Dollar since 1992 (Ita, 2004). However, the exchange rate was quite unstable as the economic reforms caused fluctuation between Russia ruble and U.S. dollar. The instability of exchange rate imposed a great impact on domestic and imported commodity price. Thus, this affects the quantity of money demanded in Russia.

Besides that, the gradual opening up to international trade after the collapse of Soviet Union leads to more advertising activity for increased production and import of goods and services. Bahmani-Oskooee & Xi & Wang (2012) has found that increased output could induce people to demand more money to facilitate their transaction. Russian advertising market grows rapidly particularly the years after

2000. It ranked 20th among European countries in 2000 and increased to the position of 6th in 2009 (Nazarov, 2011). This implied that growing trend of transaction money demand for advertised goods and services. In other words, the increasing demand for advertised goods leads to higher demand for money balances (Hiew, Puah & Habibullah, 2013). Hence, this study also aims to provide more evidence on the relevancy of advertising expenditure on money demand.

In addition, the study of the factors affecting money demand always been studied among the researchers. The common macroeconomics variables which are always affects money demand of a country include real income, interest rate, exchange rate, and inflation rate (Korhonen & Mehrotra, 2010). This involved consideration of opportunity cost of holding money and also scale variable. However, the founding from previous study varies for different country. Therefore, it is interesting to further investigate the relationship between money demand and other relevant factors such as advertising expenditure which is more significant after 2000s.

There are some research question dealing with the study of relationship among real income, advertising expenditure, exchange rate and money demand in Russia. These research questions are listed as below,

1. Is there any relationship between real income and money demand in Russia?
2. Is there any interaction between advertising expenditure and money demand in Russia?
3. Is there any causality association exchange rate and money demand in Russia?

1.3 Objectives of the Study

The general objective of this research study is to examine the relationship among the commonly used macroeconomic variables such as real income and exchange rate and increasing important of advertising expenditure variable with the real M2 monetary aggregate.

The specific objectives is,

1. To investigate the cointegration relationship between real income and real M2 in Russia.
2. To examine the causality relationship between advertising expenditure and real M2 in Russia?
3. To study the effect of exchange rate on real M2 in Russia?

1.4 Significance of Study

The study investigates the relationship between macroeconomics variables which include advertising expenditure and money demand for Russia. In the previous study, the researcher studied on various factors that affect money demand for few countries. However, it is less attention being paid to other relevant variables which are considered plays important role in affecting money demand in recent years. Moreover, some of the previous studies just focused on money demand during the financial crisis or banking crisis. Thus, this study can be considered as an important study to determine the factors that affect money demand for Russia as this study used 44 observations to investigate this short-run and long-run relationship.

Besides that, this study will be considered beneficial for policy makers and investors to understand more on Russia's economy. The understanding of relationship of macroeconomics factors and money demand is important for the policy makers to formulate an effective monetary policy.

1.5 Organization of Study

The study is organized as following: The chapter two reviews the related previous studies have been done by researchers. The chapter two divided into five sections which included money demand, theoretical framework, empirical evidence, empirical testing procedures and summary of the journal articles. The chapter three discuss about the data and method that employed in this study. Chapter four is used to analysis and interprets the empirical result. Finally, the chapter five concludes the overall finding and provides policy implications.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

The purpose of this study is to examine the relationship among real income, advertising expenditure, exchange rate and M2 money demand. This section includes a review of the theoretical frameworks, empirical evidence, and testing procedures about these variables in Russia. Section 2.1 presents the money demand, Section 2.2 presents theoretical framework, Section 2.3 includes reviews of the empirical findings, Section 2.4 discusses the testing procedure and Section 2.5 presents the concluding remark for this chapter.

2.1 Money Demand

In general, money supply controlled by central bank of Russia whereas money demand is the amount of money people want to hold in cash or bank deposit for transaction purpose. The quantity of money injected into the market economy depends on the quantity of money demanded in an economy and vice versa. Therefore, the quantity of money supply reflects the quantity of money that people demanded in an economy. This is supported with French economist Leon Walras who has formulated general equilibrium theory in 1874 in 'Elements of Pure Economics'. This theory is related to the supply and demand factor in which prices are equilibrium.

2.2 Theoretical Framework

There are four approaches that can be used in explaining the quantity of money demanded. First approach is Classical Quantity Theory of Money. This theory is due to Irving Fisher studied on monetary aggregate. According to Fisher's approach, three conditions such as the number of transactions, the average price of transaction and the velocity of money circulation will affect the quantity of money demanded (Telyukova and Economics, 2008). The formation of quantity theory was based on early exchange equation. The quantity theory of money demand equation shown below:

$$M^s V = PY \quad (2.1.1)$$

$$M^d = M^s \quad (2.1.2)$$

$$M^d = \frac{PY}{V} \quad (2.1.3)$$

This theory mentioned that when money is in equilibrium condition or shown in equation (2.1.2), money demand is equal to money supply, that is, MD=MS. This model was substituted into theory equation and it can be concluded that money demand is proportional to nominal income provided velocity is constant as shown in equation (2.1.3). In addition, this model indicates that interest rate does not poses a relationship with money demand.

Secondly, Keynes' Liquidity Preferences Theory is related to money demand. According to Keynes, the three reasons why people prefer to hold money in the form of cash are transaction purpose, precautionary reason, and speculative motive (Telyukova and Economics, 2008). However, this theory opposed to the fisher's approach as it disagrees with the constant velocity. For transaction purpose, the